

EMPIRE COTTON GROWING CORPORATION

LETTER

FROM

THE CHAIRMAN OF THE FEDERAL
TRADE COMMISSION

SUBMITTING

IN RESPONSE TO SENATE RESOLUTION
NO. 317, SIXTY-EIGHTH CONGRESS, SECOND
SESSION, OF JANUARY 27, 1925, A REPORT
REGARDING THE DEVELOPMENT, METHOD,
AND ACTIVITIES OF THE EMPIRE COTTON
GROWING CORPORATION, A BRITISH FIRM



FEBRUARY 26 (calendar day, FEBRUARY 28), 1925.—Ordered
to be printed, with illustrations

WASHINGTON
GOVERNMENT PRINTING OFFICE
1925

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For the preparation of this report the commission acknowledges especially the services of Mr. Byron Phelps Parry.

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LETTER OF TRANSMITTAL

FEDERAL TRADE COMMISSION,
Washington, February 28, 1925.

SIR: I have the honor to transmit herewith the report of the Federal Trade Commission regarding the development, methods, and activities of the Empire Cotton Growing Corporation, a British firm. This report is submitted in response to Senate Resolution No. 317 (68th Cong. 2d sess.) adopted January 27, 1925.

By direction of the commission.

VERNON W. VAN FLEET, *Chairman.*

PRESIDENT OF THE SENATE OF THE UNITED STATES,
Washington, D. C.

LETTER OF TRANSMITTAL

FEDERAL TRADE COMMISSION

VERNON W. VAN FLEET, *Chairman.*

JOHN F. NUGENT.

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HUSTON THOMPSON.

WILLIAM E. HUMPHREY.

OTIS B. JOHNSON, *Secretary.*

REPORT OF THE FEDERAL TRADE COMMISSION ON THE EMPIRE COTTON GROWING CORPORATION

Submitted to the Senate in response to Senate Resolution 317, Sixty-eighth Congress, second session

FEBRUARY 28, 1925.

REPORT ON THE EMPIRE COTTON GROWING CORPORATION

Section 1. Origin and scope of the inquiry.

To the PRESIDENT OF THE SENATE OF THE UNITED STATES,
Washington, D. C.

SIR: This report is made in response to the following resolution of the United States Senate, passed on January 27, 1925:

Resolved, That the Federal Trade Commission be requested to report to the Senate as soon as possible whatever information it possesses or has ready access to regarding the development, methods, and activities of the Empire Cotton Growing Corporation, and as to the probable effect upon American cotton growers of the action of the British Government as outlined in article 6 of the recent ultimatum to Egypt with respect to the increase of the area to be irrigated at Gezira in the event such action should be carried out.

This report sets forth, briefly, the situation confronting the British cotton trade and the efforts made to improve this position by increasing cotton cultivation within the Empire. The activities of the British in the Gezira are discussed, and their possible effect upon American cotton growers. In accordance with the terms of the resolution, the commission has confined itself to information of a readily accessible character. Use has been made of the many publications and documents bearing on the subject to be found in the Congressional Library and at the several departments.

Section 2. The World Cotton Production and Consumption.

Production.—The following table shows for three specified years, 1921–22 to 1923–24, and the average for these years, the cotton acreage, average yield per acre, and the production in bales for the world, the United States, India, and Egypt.

From this table it is seen that the United States has, for the period covered, the largest average cotton acreage with 33,665,000 acres, followed by India with 20,483,000 acres and Egypt with 1,619,000 acres. The average yield per acre in pounds for the same three years, 1921–22 to 1923–24, for the United States was 132 pounds; for India, 98 pounds; and for Egypt, 324 pounds. The average production in bales of 478 pounds net over the three-year period was 9,285,000 bales for the United States, 4,081,000 bales for India, and 1,095,000 bales for Egypt. These three countries produced slightly more than 81

per cent of the average estimated total world production for the three-year period of 17,843,000 bales.

The United States and India have for many years been the leading cotton producing and exporting countries, and although ranking below China in total production, Egypt is the third cotton exporting country. The balance of the total world production is widely scattered throughout the world, some of the more important countries, with their production for 1922-23, being China, 2,048,000 bales; Brazil, 552,857 bales; Peru, 137,000 bales; and Chosen (Korea), 103,347 bales.¹

Cotton acreage, average yield per acre, and production for the world and specified countries for the years 1921-22 to 1923-24, inclusive

	Cotton acreage ¹ (1,000 acres)				Average yield per acre ¹ (pounds)				Production ² (1,000 bales of 478 pounds net)			
	1921-22	1922-23	1923-24	Average	1921-22	1922-23	1923-24	Average	1921-22	1922-23	1923-24	Average
World ³	58,356	63,995	(⁴)	61,176	(⁴)	(⁴)	(⁴)	-----	15,330	18,900	19,300	17,843
United States.....	30,509	33,036	37,420	33,655	125	141	129	132	7,954	9,762	10,140	9,285
India.....	18,451	21,154	21,845	20,483	97	98	(⁴)	98	3,748	4,247	4,247	4,081
Egypt.....	1,341	1,868	1,649	1,619	321	299	352	324	902	1,170	1,213	1,095

¹ From the Yearbook of the Department of Agriculture, 1923.

² Production figures for 1921-22 from the Yearbook of the Department of Agriculture, 1923; those for 1922-23 and 1923-24 are from Foreign Crops and Markets, issue of Dec. 31, 1924

³ In each case world figures are estimates.

⁴ Figures not given.

The Russian cotton crop, which was of little importance in the total world's supply for a number of years during and immediately after the war, has shown a tendency to increase in size in the past few years, and in 1924 was 437,500 bales of 500 pounds each, the acreage planted being 1,188,237. The cotton crops of Russia formerly were noted for the high yield that for 1915 being 353.7 pounds per acre. This yield dwindled sharply and in 1921 was but 69.8 pounds per acre. The tendency has been for the average yield to increase again; in 1923 the figures were 169.2 pounds per acre. It is reported that the Soviet Government has been much interested in the Russian cotton crop and has aided materially in bringing about the increase of the past few years.

The importance of the United States crop in the world production is obvious from the foregoing statement. It is watched by the cotton trade throughout the world and is the dominant factor in world cotton prices. Not only is it important in size, but also in quality, for it supplies much of the world's needs for the medium length staples, the Egyptian crop being of the longer lengths while that of India is largely shorter than the bulk of the United States crop.

The map of the world shown in Appendix I portrays graphically the cotton districts of the world in 1919. This map was prepared for the Empire Cotton Growing Committee (see p. 5) and was included in its report to the board of trade submitted October 22, 1919.

Consumption.—The estimated world consumption of raw cotton of all growths for 1922-23 was 20,579,000 bales of 478 pounds net.² Of this total it is estimated that 12,312,000 bales were American. The United States was the largest consumer, according to the Depart-

¹ Yearbook of the Department of Agriculture, 1923.

² Commerce Reports, Feb. 12, 1923, p. 407.

ment of Commerce, which estimated that of the 6,400,000 bales consumed in the United States 6,150,000 bales were of American cotton. The United Kingdom was estimated as consuming 2,100,000 bales of American cotton and 1,000,000 bales of other growths. British India consumed, according to the same estimate, 1,950,000 bales of cotton of which 20,000 bales were American.

The foregoing figures indicate that the American cotton crop is of great importance to the spinners of Great Britain. They do not, however, adequately show this importance. Many British cotton mills depend almost entirely upon American types. For the six months ending January 31, 1922, there were 35,436,321 spindles in England in what is known as the American section, out of 51,162,519 spindles in the country reporting to the International Federation of Master Cotton Spinners' and Manufacturers' Association.³

Section 3. The British cotton outlook.

British concern over supply of raw cotton.—The question of their supply of raw material has always been an important one to the British cotton spinners. Great concern has been manifested by them not only in the tendency of the exportable surplus of the American crop to decrease in size but also in the increase in British grown cotton. In recent years, as previously indicated, the cotton crop of the United States has shown a decided tendency to decline in size, and since 1914-15 this has been the tendency of the world crop.⁴ In addition the number of mills in the United States has increased rapidly of late, which, of course, tends to cut down the exportable surplus. The resultant high prices for raw cotton have been severely felt by the British spinners, particularly during the period when the rates of exchange were adverse. The British cotton trade maintains that not only is it to the interest of the British spinners and their thousands of employees but to the entire British public, and particularly to the colonials, that a source of cotton for British mills be developed in the British possessions and dependencies. Owing to the importance of the cotton-spinning industry in the industrial life of Great Britain, the assurance of a satisfactory supply of raw cotton has been of deep interest to the Government as well as the trade.

Thus the British spinning industry, which is an important part of the economic life of that nation, is dependent for a large proportion of its raw material upon a foreign nation, while large areas within the Empire are suitable for growing cotton, and the particular types of cotton which would do much to relieve its dependence upon the American crop. It is with the attempts of the British to obtain a greater degree of independence in this respect that this report is concerned.

Attempts to further cotton growing within the Empire.—For at least 20 years the English have been making an organized effort to lessen their dependence upon America as a source of raw cotton.⁵

³ Bulletin of Feb. 28, 1922, International Cotton Statistics, International Federation of Master Cotton Spinners and Manufacturers' Association. The American section is contrasted with the Egyptian section; the distinction is made on the types of cotton consumed in the two sections or groups of mills.

⁴ Yearbook of the Department of Agriculture, 1923, p. 804.

⁵ The following quotation from a speech by Neville Chamberlain, Minister of Health, delivered in Manchester, England, on Feb. 3, 1925, is indicative of the attitude of the British regarding the cotton outlook of the Empire: "Since we can not grow cotton, would it not be better for us to obtain our cotton from British possessions in Africa and elsewhere, instead of competing for the diminishing surplus of the American production, the purchase of which only exalted the dollar at the expense of the pound sterling?"

Perhaps the earliest systematic attempt along the lines of fostering British cotton cultivation was the formation of the British Cotton Association. The association was very active in encouraging the growth of cotton in the British possessions, particularly in Africa, and contributed much to the increase in cotton production in that continent. The association was incorporated by royal charter and has been in existence over 20 years. Its activities may be likened, in part at least, to those of the old-time cotton factor in the South. The important difference to be noted, however, in making this comparison, is that the association has been more interested in furthering the position of the Empire as a cotton producer than in immediate profits.

The association makes advances to growers and handles both cotton and cotton seed on a commission basis. It also supplies buildings, machinery, stores, etc., for a commission, to firms interested in cotton cultivation, to planters, and others. The quantities of cotton financed and sold through the association for the six years 1918 to 1923, inclusive, are shown in the following statement:

	Bales of 400 pounds each
1918-----	29, 190
1919-----	30, 881
1920-----	23, 513
1921-----	63, 966
1922-----	67, 386
1923-----	54, 606

The value of the buildings, stores, machinery, etc., sold through the association in 1923 was £59,637. The association also has been credited with the development of cotton cultivation in Nigeria, where it has established ginneries throughout the country. It is worth noting that the variety yielding the best results in the northern Provinces of Nigeria is that known as Allen's, an American variety.

There are several concerns now in existence in some of the British colonies or dependencies which both grow cotton and purchase it from other growers. These companies, apparently, are subsidized to some extent by the British Government or by the respective colonial governments. While engaged in the business for profit, they are also conducting experiments in cotton culture and doing everything possible to encourage the growth of cotton of the best varieties and by the most improved methods. In some localities these companies practically supply the only market for native-grown cotton, and the prices paid must be sufficiently high to encourage further production.

The British have long recognized that it is not enough to obtain a large acreage planted to cotton in the various parts of the Empire suited to the growth of the fiber. When grown the cotton must be marketed and at prices which will encourage growers to continue their efforts.

The following ⁶ indicates the method by which cotton from one region is marketed:

The system under which the bulk of the cotton is at present being grown in the Sudan merits more than a passing reference. The proceeds of the crop are pooled and the results are distributed on a carefully devised plan. The native, who does the cultivation, received 40 per cent; the Government, which supplies

⁶ Empire Cotton Growing Corporation: Memorandum on Cotton Growing Within the Empire, p. 5.

the land and water, gets 35 per cent; and the capitalist, in this case so far represented by the Sudan Plantations Syndicate, undertakes the general management, does the minor canalization, plows the land and supervises the cultivation, does the ginning and finances the crop, and receives 25 per cent. So far the arrangement, which, if not actually devised by Lord Kitchener, was most warmly approved by him, has worked smoothly and commanded the complete confidence of the native cultivator. This scheme would appear to be worthy of careful observation, as it would seem, at all events in this particular area, to secure to the native the full fruits of his labor and retain him on the land without any suspicion of exploitation, while at the same time full advantage is taken of capitalistic enterprise and scientific knowledge.

In Nigeria the British Cotton Growing Association during the recent slump in prices guaranteed a price and "carried on its own shoulders the risk that would otherwise have fallen on the native cultivator."

As will appear later in this report (see p. 6), the cotton trade of Great Britain has received considerable aid in fostering cotton growing within the Empire both from the home government and from the governments of the several possessions and dependencies. There is every indication that the British Government is cognizant of the situation confronting the spinners and it certainly has grasped a number of opportunities to improve the Empire's position in regard to cotton supplies.

During the early stages of the war the British Government created a number of committees "to inquire into the position of the different great trades of the country both before the war and as they were likely to be affected by it."⁷ Among these committees was one covering the various textile trades which recommended to the Government that it appoint a special committee to investigate in all its bearings the question of increasing the supply of cotton in the Empire. The Indian Government also was urged to appoint a committee to inquire into the possibility of increasing and improving the cotton growth of India. These recommendations were adopted and the Empire Cotton-Growing Committee was appointed on July 25, 1917, and the Indian Committee on September 27, 1917. The report of the Empire Cotton-Growing Committee was published in January, 1920. It seemed to this committee that the solution of its problem, that of the adequate development of the Empire's resources for the production of cotton depended on the "proper handling of three main questions," as follows:⁸

I. The acquisition of necessary knowledge and the supply of men to apply that knowledge.

II. The establishment of efficient arrangements for (a) controlling the growing of cotton crops, and (b) marketing the crops, when grown, so as to secure the best possible results for the growers.

III. The provision of the necessary funds.

The conclusions and recommendations of the committee outlined quite fully a plan for furthering the growth of cotton in British possessions. (See Appendix III.) Later in the year the committee again reported giving an outline of the executive organization it considered necessary to carry out the recommendations of the earlier report. (See Appendix IV.) It appears that the Empire Cotton Growing Corporation was organized very closely along the

⁷ Report of proceedings of the Tenth Annual Congress of the Master Cotton Spinners' and Manufacturers' Associations, Zurich, June 9, 10, and 11, 1920.

⁸ See Appendix II.

lines recommended in this second report and has functioned about as planned by the committee.

While the British are thus attempting to produce cotton of all varieties in their projects throughout the Empire, with care, however, that each area be devoted to those types best suited to its soil and climatic conditions, it seems evident that they are particularly concerned with growing varieties that will compete with American growths. In its report of October 22, 1919, the Empire Cotton-Growing Committee published a table showing that, based on pre-war figures, the Empire's share in the world's production of "best" sea-island cotton was 33 per cent; of sea-island, 89 per cent; of the Egyptian type, 70 per cent; of the "Americans," 2.5 per cent; and of the Indian type, 64 per cent. In commenting on these percentages the committee in the above-mentioned report said in part:

The Empire's supply of cotton is chiefly deficient in the medium grades which form the raw material of the great bulk of the Empire's trade. Of such qualities the Empire's total production has hitherto been trifling compared to the world's production; but there have been distinct evidences of development on a large scale of new areas for the production of such medium cottons. Both India and West Africa have proved their capacity to produce such cotton in much larger quantities than hitherto.

No indication has been found that the cultivation of cotton in the British possessions has as yet been offered widely to the public as an investment opportunity, as has the cultivation of rubber, for example. The possibilities of forming companies for the cultivation and marketing of cotton, the stock of which is to be offered for public subscription, has been considered, however, and it is believed by many that in a few years' time such companies will be in existence.

Section 4. The Empire Cotton Growing Corporation.

Organization and purpose.—As previously stated, the Empire Cotton Growing Corporation was formed as a result of the recommendations of the Empire Cotton Growing Committee. The corporation is representative of the entire British cotton trade; and the Government departments also are adequately represented on the board or council. The charter was received on November 1, 1921.

The primary purpose of the corporation is to assist and encourage the production of cotton within the British Empire, particularly through scientific study and experiment, but also in other ways.

The corporation apparently enjoys a full measure of cooperation from the British Government. It appears that whenever the influence of the Government has been needed to further the interests of the corporation it has been forthcoming. The insertion of section 6 in the ultimatum to Egypt of November, 1924 (see p. —), illustrates the regard the Government has for the aims and purposes of the corporation.

In addition to the aid of the British Government the corporation seems to have received the support of all the colonial governments. These latter have been very helpful, apparently, in providing facilities for the corporation in studying conditions in the several colonies and have at times issued ordinances affecting cotton which have been originated by the corporation.

The British cotton trade is almost unanimously, if not entirely, behind the corporation. The attitude of the British spinning interests is indicated by the fact that owners of over 90 per cent of

the spindles of the country assented "to the principle of a levy of 6d. per bale of 500 pounds on all raw cotton forwarded to spinners," the proceeds to be used by the corporation.⁹ Later on owners of 79 per cent of the spindles expressed themselves willing to support legislation making the above-mentioned levy obligatory. Before the bill could be passed many spinners voluntarily paid the levy, the corporation estimating that these contributions amounted to approximately 67 per cent of the sum which would have been forthcoming had the levy been universal.

Various publications devoted to the cotton trade of Great Britain indicate very clearly that the corporation has the support of other branches of the cotton trade as well as that of the spinners. The reports and documents of the corporation also bear testimony to this effect.

Finances of the corporation.—Upon the formation of the corporation the Government advanced a sum to enable the corporation to meet current expenses. When the charter was granted the Government then advanced, less the sum previously given, £978,715. This latter sum, less about £600, was invested and the interest received from this investment constituted the income of the corporation. The financial plans of the corporation included the use of funds to be obtained from a levy of 6d. per bale on all cotton forwarded to spinners within the United Kingdom. A bill was introduced in Parliament in 1922 providing for this levy but the dissolution of that body occurred before the bill became a law. This curtailment of anticipated funds forced the corporation to limit its activities somewhat, but since the corporation's plans were then in a formative state the loss of income was not severely felt.

This levy is now in effect, an act of Parliament making it obligatory on all spinners in the United Kingdom having been approved on July 18, 1923. Publications of the corporation since that date indicate that the financial position of the corporation is now satisfactory.

Appendix V shows the revenue and expenditure account and the balance sheet of the corporation for the year ending March 31, 1924.

Activities of the corporation.—By means of careful surveys of the cotton growing possibilities of the several parts of the Empire the corporation has been able to direct its work in aiding the production of cotton to the best advantage. It is not necessary to dwell at length in this report on every step taken by the corporation. It is sufficient to point out and illustrate the principal ways in which it is endeavoring to follow out its purpose and to examine with more attention to details its activities in the Gezira district.

In furthering the production of cotton in the British Empire the corporation has endeavored to do so both systematically and scientifically. Efforts are made to obtain trained agriculturists to send into the various regions to be developed. In order to obtain such agents, as well as to further the general interest in the proper cultivation of cotton, the corporation has founded several "studentships." In 1922 six students were elected, four of whom worked at Cambridge, one at the Imperial College of Science and Technology, and one at the West Indian Agricultural College, Trinidad. Of the four students selected in 1921, three upon completion of their work were appointed to

⁹ Empire Cotton Growing Corporation. Report of the executive committee to be submitted at the meeting of the administrative council on Dec. 14, 1922, p. 2.

positions with the corporation.¹⁰ Twelve students were nominated in 1923. In addition to these studentships the corporation has contributed in several cases to agricultural colleges. For example, the sum of £500 per year for two years was granted in 1921-22 to the agricultural college at Trinidad. Many of the public and private research institutes of the Empire have offered their facilities to the corporation's students. Most of these students upon completion of their work are to be sent out by the corporation as agents to help develop the various regions. The reports of the corporation indicate that there is a demand for these men from the several countries endeavoring to improve their cotton production.

The corporation has cooperated in other ways with the local Governments of the several parts of the Empire which have possibilities as cotton producing regions. It also cooperated with other corporations now in existence which are interested in cotton production. For example, a "three-cornered partnership has been established between the Sudan Government, the native cultivator, and a company to be called the Kassala Cotton Co., in which the Sudan Plantations Syndicate will take a substantial interest. Having regard to the important results that may be expected from the activities of the Kassala Cotton Co., the corporation is considering the desirability of interesting itself in the scheme by taking up a portion of the debenture issue."¹¹

While many parts of the Empire now produce cotton and are capable of producing larger yields, and while the corporation is active in all these regions, it is the Sudan that is now receiving more attention. The Gezira and Kassala districts, both located in the Sudan, hold more promise, in the eyes of the corporation, for quick returns in the form of readily marketable cotton in large quantities than the other regions. This is due to a number of reasons aside from the convenient location of the area and conditions of climate, topography, and soil. Political and social conditions in the Sudan are favorable to its more speedy development, at least as far as the Gezira and Kassala areas are concerned, than is the case elsewhere. Then, too, transportation facilities are either adequate for the ready marketing of the crop or are expected to be ready by the time these regions are fully developed.

The irrigation projects are well under way in the Blue Nile and Kassala areas. The corporation believes that in the next few years approximately 500,000 acres will be under cultivation in these areas, from which 150,000 additional bales may be expected.¹² The political situation in the Sudan seems to be such that the corporation can count on the fullest measure of cooperation from both the British and the local Governments. Then, too, the native seems capable of grasping quickly and utilizing quite fully proper methods of cultivation when supervised by the trained agents of the Sudan Plantations Syndicate and of the corporation.

A further reason for the tendency to concentrate efforts in the Sudan is that much of the soil in that region that is capable of producing cotton is particularly well adapted to growing American varieties. This is a point of great importance in the eyes of the

¹⁰ Empire Cotton Growing Corporation report of Dec. 14, 1922, pp. 13, 14.

¹¹ Empire Cotton Growing Corporation report of Dec. 14, 1922, pp. 4, 5.

¹² Empire Cotton Growing Corporation. Memorandum on Cotton Growing within the Empire, p. 4.

British spinners, for cotton of the medium lengths is particularly needed.

Even greater prospects are possible from the Sudan, however, according to the corporation. If an understanding could be reached with Abyssinia to exploit fully the irrigation possibilities of the Blue Nile, the corporation stated that "a new African cotton belt would indeed be called into existence to restore the balance of the American, and some 5,000,000 acres of the finest cotton growing land in the world would be capable of immediate development."¹³

In 1922 the Blue Nile irrigation works had practically suspended operations, and it was upon this organization that the watering of the Gezira plains depended. The Empire Cotton Growing Corporation, "by means of a powerful deputation representative of all sections of the cotton industry," urged upon the Secretary of State for Foreign Affairs "the importance, in the interests of the cotton industry, of proceeding as soon as possible with the construction of the Gezira Dam." The deputation was assured that work would be resumed in the autumn of 1922 and a contract was signed later in that year providing for the execution of the project.¹⁴ That the above accomplishment was regarded as of great importance is indicated by the following excerpt from a report of the executive committee of the corporation, which refers also to another activity in connection with cotton production in the Sudan:

The Executive Committee dwell with the greatest satisfaction on these two decisions, which are of the highest importance to users of cotton. They do not exaggerate when they state that the action taken by the Corporation was of the greatest possible assistance as regards the fulfillment of both projects.

The following quotation from the report of the third annual general meeting of the corporation held October 23, 1924, is illustrative of another activity of this organization:

The Corporation is not content with merely engaging the Government to assist transport, but are themselves taking a practical step in the hope that it may help towards the solution of the transport problem. They are sending out to Northern Nigeria a transport unit consisting of two lorries * * *. It is perfectly obvious that this experiment, which is in the nature of economic research, is not intended to be a profitable one from the point of view of the Corporation. * * * it is satisfactory to learn that it is likely to stimulate directly further cotton growing by natives in the Sokoto area in that Colony.

In summing up the activities for the period ending in October, 1924, the Earl of Derby, president of the administrative council of the corporation in the report of the third annual general meeting said:

the development of cotton growing within the Empire during the past twelve months has exceeded expectations. Not only has more cotton been grown but there is more prospect of cotton being grown than I expected.

The chairman of the executive committee of the corporation stated at this meeting that—

the average production of cotton in the British Empire (excluding India) for the two years 1917-18 was 64,000 bales; for the next two years it was 93,000 bales; for 1921-22 it was 134,000 bales and the average for 1923-24 will be well over 200,000 bales per annum.

¹³ Empire Cotton Growing Corporation. Memorandum on Cotton Growing within the Empire, p. 5.

¹⁴ Empire Cotton Growing Corporation report of Dec. 14, 1922, p. 4.

Section 5. The Gezira district.

The Gezira district in northern Africa lies between the Blue Nile and White Nile and to the south of Kartoum. There are approximately 4,000,000 acres in the district, of which about 1,000,000 acres is regarded by the Empire Cotton Growing Committee as suitable for growing cotton. It is necessary to irrigate the land before cotton can be grown in this district. Cotton has been produced in the Gezira region for many years. The common type grown is a staple cotton of excellent strength and character. Under the Sudan Plantations Syndicate the production has increased in recent years but statistics for this area do not seem to be available.

The British have desired to put under irrigation practically all of the Gezira district particularly for growing cotton. The Egyptians being lower down in the Nile have feared that any large development of the Gezira irrigation project would so lessen the water supply as to hinder the agricultural development of Egypt. The British have maintained that the Gezira project would depend on water from the Blue Nile and that Egypt could be supplied by the White Nile, and furthermore, that the Gezira project would not seriously deplete the Blue Nile. In 1920, however, Lord Allenby, high commissioner for Egypt and the Sudan, promised that the area in the Gezira to be irrigated by the dam then under construction would be limited until a commission could determine the matter.

When Sir Lee Stack, governor general of the Sudan, was murdered in Egypt in November, 1924, the British Government in its note to Egypt demanded, among other things, that the Egyptian Government "notify the competent Department that the Sudan Government will increase the area to be irrigated at Gezira from 300,000 feddans¹⁵ to an unlimited figure, as need may arise." This attitude of the British regarding Gezira occasioned a storm of protest from the Egyptians who maintained that it would injure seriously the agricultural development of Egypt and also that it was contrary to past agreements between the two Governments. The Egyptian note, in reply to the British ultimatum, said that the reference to the irrigation of the Gezira was premature, to say the least, and further stated that Great Britain had always promised that an increased cotton area would be arranged "under an accord taking cognizance of Egypt's agricultural interests."¹⁶ The status of the situation in regard to this part of the ultimatum remained unchanged apparently, for some weeks. Recently, however, the British consented to submit to arbitration this question of irrigating the Gezira. It would seem, therefore, that the immediate prospect is for the development of the 300,000 feddans already under consideration with the future development of the district dependent upon the result of arbitration between the two countries. In its third annual report the corporation speaks hopefully of the 300,000 feddans being under cultivation in the near future.

Section 6. Effect of British activities upon American growers.

Activities in the Gezira.—As indicated in the preceding section the future development of the Gezira district is doubtful and must

¹⁵ A feddan is about 1¼ acres.

¹⁶ Manchester Guardian, Nov. 24, 1924.

remain so until the results of the arbitration between Egypt and Great Britain are known. At present the competition afforded American growths by Gezira cotton is insignificant and it is difficult to imagine any great change in this respect when the 300,000 feddans are under cultivation. If the total acreage in the Gezira district available for cotton is 1,000,000 acres and it is all eventually put into cotton of American types, or that compete with American growths, the resulting yield would not seriously impair the position of the American grower.

Activities in the entire Empire.—It would seem that while the increase of cotton acreage in the Gezira district even to its full possibilities should be of comparatively little concern to American growers, the possibilities of larger production throughout the British Empire is a matter of considerable importance.

India is already a large producer of cotton, but not nearly as large as may be expected in the future. The total acreage planted is second only to that of the United States. While yield per acre has always been low (98 pounds per acre in 1922-23)¹⁷ and the staple, in so far as the bulk of the crop is concerned is too short to compete with American growths, the corporation believes that improved methods of cultivation and the use of better seed will greatly increase the yield per acre and the quality of the fiber. In speaking of the prospects for future development in India the corporation stated that cotton of about 1 inch staple had been successfully grown in the Punjab from seed imported from America and that there was every prospect for steady progress in the future. The corporation is hopeful that as the Indian production of longer staples is increased the demand from that country for Egyptian cotton will lessen, leaving more of the latter for British demands. It also hopes that eventually Japan will turn to India for the better qualities and thus ease still further the demand for Egyptians.¹⁸

Much of what has been said above regarding the future possibilities of India is true for certain other parts of the Empire and, as previously stated, the cotton trade of Great Britain assisted by the Government is making a determined effort to develop these regions. The corporation in speaking about the possibilities of Uganda stated that it is "reasonable to imagine Uganda a producer of a million bales per annum."¹⁹ It is important to note that Uganda cotton, thus far at least, is used against stapled American and upper Egyptian for certain counts. One of the chief drawbacks to the development of Uganda cotton is the lack of adequate transportation facilities, which are expected to improve. The corporation speaks highly of the natives as cotton cultivators.

The corporation stated that, if progress was continued, Nigeria might be expected eventually to produce 1,000,000 bales annually. It seems that European ownership of land is banned in Nigeria and this the corporation believes to be a hindrance to the proper development of the country as a cotton market. The corporation is, however, endeavoring to assist in other ways and proposes to put at the disposal of the Nigerian Government a force of trained cotton specialists, the cost to be borne by the corporation.

¹⁷ Year Book of Department of Agriculture, 1923, p. 801.

¹⁸ Empire Cotton Growers Corporation: Memorandum on Cotton Growing within the Empire, p. 9.

¹⁹ *Ibid.*, p. 6.

The above references to a few countries could be applied, with slight variations, to several parts of the Empire where cotton can be grown. The natural advantages exist and the British seem determined to grasp them. It is true that they have many difficulties to overcome, such as lack of transportation facilities and lack of labor in some regions resulting in high costs of production.

One important factor that must be considered by the British in their efforts to increase cotton production within the Empire is the question of price. Any marked increase in the total production that is maintained must be reflected in the price of cotton. While in some regions in the British Empire cotton can be produced cheaper than in the United States, this is not now true apparently of all sections of the Empire. Furthermore, the British are faced with a difficult problem in the lack of transportation facilities in many regions. Such facilities can not be supplied merely to transport cotton, but will require a great deal of development of other resources.

The views of American cotton merchants and others interested in cotton in regard to the eventual position of the United States as a cotton producer are of interest. Many of the leading cotton merchants of the United States have maintained for years that it is only a question of time before the British Empire will lead the United States in the production of cotton. Their views are based largely upon the following facts: (1) The decrease in size of the American crop in recent years, (2) the stimulus to British production resulting from the increase in the number of American cotton mills and the consequent reduction in exportable surplus, (3) the importance of the spinning industry to the economic life of Great Britain, and (4) the strenuous efforts of the British to produce cotton within the Empire.²⁰

Many cotton merchants who expect eventual domination by the British Empire of the cotton production of the world hold that it will be many years before this is accomplished.

Section 7. Conclusions.

Effect of increased cotton production in the Gezira.—If the total area in the Gezira district suitable for growing cotton is 1,000,000 acres, as has been stated by the Empire Cotton Growing Corporation, then it would appear that the effect of the ultimatum to Egypt of November, 1924, upon the American cotton grower will be very slight. In fact, it is difficult to foresee any immediate effect, since the irrigation works now in operation are unable to supply water for this entire area. Even when these 1,000,000 acres come under irrigation, the total yield apparently would not seriously affect the American grower.

Effect of increased production throughout the Empire.—It is trying to look far into the future to forecast the effect upon American cotton growers of the activities of the Empire Cotton Growing Corporation and other British agencies now attempting to produce cotton throughout the Empire. There seems to be little danger for many years to come of the United States losing its position as the largest producer of raw cotton. The efforts of the British are of real concern, however, to

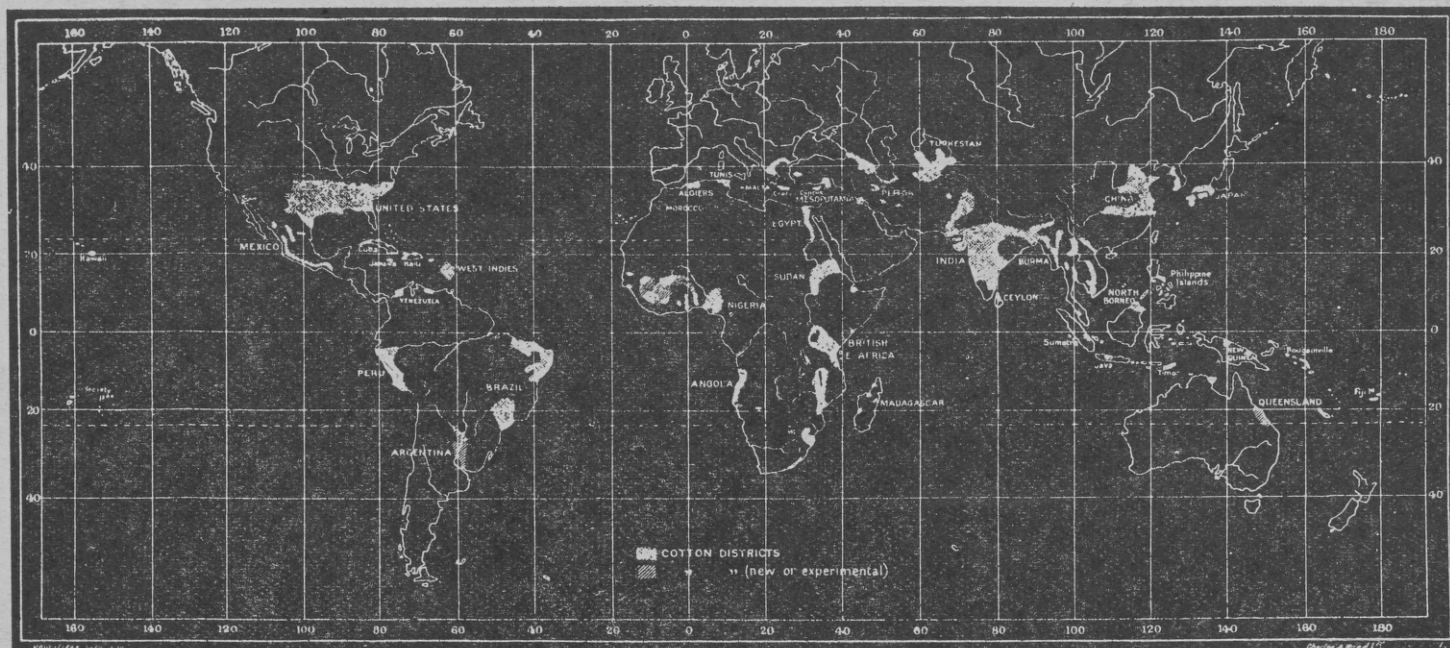
²⁰ Theo. H. Price, publisher of Commerce and Finance, a journal especially devoted to the cotton trade, expressed the opinion in 1923, that to date all efforts on the part of France, Germany, Portugal, and Spain to grow cotton had resulted in failure. In speaking of the similar attempts of the British he stated the production of cotton within the Empire over a period of years, and concluded that the result was "not very encouraging." He further said, "In any case it will take several decades, if not half a century, to secure any worth-while increase in the cotton production outside the United States." (Cotton and the Agricultural Corporation in the South.)

the American grower. If the British are successful in materially increasing the Empire's total production it would probably affect the price of cotton, and this might be a serious matter for the cotton growers of the United States. If the increase in production of cotton in the British Empire is gradual, as is most likely to be the case, the effect upon prices would no doubt be slight because of the probable increase in demand for cotton goods. Thus the increase in foreign production seems to afford little ground for expecting a decrease in the near future in the cotton production of this country.

The foregoing report is submitted to the Senate of the United States by the Federal Trade Commission and is signed by the chairman of the commission, acting for the commission.

VERNON W. VAN FLEET, *Chairman.*

APPENDIX I



Map of the world, showing cotton growing districts

APPENDIX II

EXTRACT OF REPORT OF THE EMPIRE COTTON GROWING COMMITTEE TO THE BOARD OF TRADE, OCTOBER 22, 1919

PART 1.—THE PROBLEM AND ITS SOLUTION

(10) *The problem.*—The problem before us is the adequate development of the Empire's resources for the production of cotton. Its solution appears to depend on the proper handling of three main questions.

I. The acquisition of necessary knowledge, and the supply of men to apply that knowledge.

II. The establishment of efficient arrangements for (a) controlling the growing of cotton crops and (b) marketing the crops, when grown, so as to secure the best possible results for the growers.

III. The provision of the necessary funds.

QUESTION I.—*The acquisition of necessary knowledge and the supply of men to apply it*

A. ACQUISITION OF KNOWLEDGE

(11) *Need for research.*—It is, we believe, generally recognised in the present day that the foundation of all agricultural progress must be based on science. This appears to be at least as true in regard to cotton as in regard to anything else. There is very little accurate knowledge, capable of being stated in precise terminology, of the different characteristics of the cotton fibre or lint, which contribute to the production of desired results in cotton yarns or in the finished articles manufactured from them. For this reason we welcome the recent establishment in Lancashire of the British Cotton Industry Research Association and trust that it will spare no efforts to discover the true relation between the characteristics of lint and the qualities of the finished article. Apart, however, from that branch of study, there is an immense field of Research to be worked in regard to the actual growing of cotton. The essential character of the cotton plant, and the temporary modifications of its lint brought about by the various local conditions under which it may be grown, have so far been little more than indicated as requiring investigation by the workers who have been engaged on the subject in different parts of the world. The evidence before us shows that there are two main lines of investigation. There are the effects of heredity by which the constitution of the cotton plant is determined and can be controlled. There are also the effects and limitations of environment, such as the seasonal period available for growth, the temperature, the rainfall and humidity, and the characteristics of the soil. Bacterial, fungoid and insect organisms are also among the many factors calling for study. Again it is clear that the Research required should be undertaken in two separate divisions. Some of the conditions to be studied are purely local and should be investigated by each locality itself. Others involve first principles of universal truth, which, however, are sometimes of less immediate practical benefit.

(12) *Proposed central research institute.*—We consider that at the earliest possible date a Central Institute should be established to undertake the study of the life of the cotton plant and the development of its lint, from all possible aspects except such as are of merely local interest and profit. By linking the work of the Institute with that of our Information Sub-Committee, it is hoped that all scientific research upon the cotton plant, together with such other research as has any bearing upon cotton-growing problems, may be codified and made easily available to students of cotton. At present the composite nature of the problems involved leads to the publication of many serviceable results of research in journals of very diverse types, so that no student can easily keep himself informed of them all.

We are also advised that there is need for a carefully compiled seed index. In the breeding of pure strains, many are obtained which do not appear to be immediately suitable for the country of origin. Some of these may, however, be valuable at a later date, or in some other country, and it should be possible for the Central Institute to make arrangements for keeping alive all potentially valuable strains of cotton and for indexing their agricultural and commercial properties.

We have given some attention to the details of this Institute, but have not felt ourselves authorised, nor have we sufficient funds in sight, to make any definite proposals. For many reasons our general impression is that Egypt would be the most convenient place in which to locate the Institute, but before this could be decided it would be necessary to consult the Egyptian Government and to ascertain that it would welcome such an Institute. We may say here that the recent appointment of the Cotton Board of Research in Egypt to deal with the local cotton crop in no way conflicts with this proposal. On the contrary it will make it very much easier to carry out the plans we have in view, and we feel sure that our proposals may justifiably be welcomed by the new Board. The Institute should also be linked up with the work which is being done or may be done in other cotton areas—for instance the West Indies. It might indeed often ask for special work to be done for it in particular places, and no doubt some grant for such work might properly be made by this committee.

(13) *Co-operation with British Cotton Industry Research Association.*—The British Cotton Industry Research Association has taken powers for research in connection with the growing of cotton and we are already in consultation with the Association as to the best method of co-operating with it. A Joint Committee of the two bodies has been appointed. If research work in cotton growing is to be made practically efficient, it must be linked at every point with research upon cotton in use. The question as to the provision of funds is discussed under the heading Finance, Question III.

B. APPLICATION OF KNOWLEDGE

(14) *Agricultural Departments need strengthening.*—Those who have had experience in previous efforts to develop cotton, and others who are qualified to advise, are, we find, unanimous in recommending that there should be very great additions to the Agricultural Departments of practically every British colony and Dependency. Everywhere more of what we may call *ad hoc* investigation is needed, more experiments, more demonstration, more teaching and training of those who engage in cotton growing as a commercial industry. This is no doubt true of all agriculture, particularly in new countries inhabited by primitive and backward peoples. It is pre-eminently true of cotton. Cotton of any value nowhere grows naturally; if left to nature, it rapidly deteriorates. Again since cotton, when grown, is simply a raw material which acquires its utility in subsequent processes of manufacture, it is impossible for growers—particularly for beginners—to discriminate without expert assistance between the values of different kinds of cotton. For these and many other reasons we feel it to be our duty to put forward, as one of our principal recommendations, the importance of strengthening the Agricultural Departments of all parts of the Empire in which cotton is or can be grown. We recognise that such strengthening is needed for the development of other crops, even if it may not in every case increase the growing of cotton in particular; but we feel that it is vital to the general prosperity of the Colonial Empire of Great Britain. Under the heading of Finance in Question III we shall indicate our views as regards the share of the necessary expense which should be borne by those interested in cotton.

(15) *Suggested enquiry by the Colonial Office.*—We gladly acknowledge that in the years immediately before the war there appears to have arisen a general recognition of the practical value of Agricultural Departments. Great efforts have been made and much valuable work has been achieved during the war by a small band of enthusiastic scientists and officers of the Agricultural Departments, working under adverse conditions of lack of staff and money. We consider, however, that in the reorganisation following the re-establishment of peace, this is, perhaps, one of the most urgent matters for consideration by those responsible for the development of Imperial resources. As to the scale of enlargement that is necessary, we find it impossible to speak with precision. There are two striking examples which may be cited: a large-scale one in the United States of America, which finds it worth while to employ many thousands of assistants in its Agricultural Department, and a small but intensive one in the Windward and Leeward Islands of the British West Indies, where the joint efforts of the Imperial Department of Agriculture, inaugurated by Mr. Joseph Chamberlain, and of the excellent local Departments of Agriculture established in each island have produced the most encouraging results. Remembering moreover that all other agricultural interests, as well as cotton, are concerned in this matter, and that there are few places where cotton is the only or even the main product, we have ven-

tured to recommend ¹ to the Colonial Office that it should at an early date appoint a small Committee (1) to consider the question of Agricultural Departments in the territories for which it is responsible, and (2) to draw up a general scale of numbers of men and of suitable salaries, which could be adopted as an ideal to be worked up to as finances permit and as the men can be found. The Indian Government has recently had its own Committee,² and will naturally decide for itself as to its Agricultural Staff. We are of opinion that the Agricultural Departments of new areas, such as Mesopotamia, which may come under the control of the British Government, will require the same consideration when their administration is regularised.

(16) *Pioneer work.*—In 1902 when the British Cotton Growing Association was founded in recognition of the need for increasing the areas of cotton supply, it speedily became evident that pioneer work on a large scale would be necessary. Very little knowledge was then available as to the conditions, whether physical or economic, under which cotton can be grown with commercial success. During the fifteen years which have since elapsed much progress has been made. Cotton has been more scientifically studied in Egypt and India and elsewhere. Moreover, the British Cotton Growing Association has learnt by practical experience that there are large areas in which cotton can not, for one reason or another, be grown commercially, and others in which prospects are extremely favorable. It must, however, be admitted that there is still much to be learnt, and we are of opinion that provision should be made for the continuation of what must be called pioneer work in contradistinction to the normal work of Agricultural Departments. The time is past when it is necessary to try experiments blindfold. Sufficient knowledge has now been acquired to make it possible for pioneer work to be scientifically limited and controlled. But for many years to come it will be necessary to make investigations in fresh districts of the immense areas included in the British Empire, and afterwards to conduct experiments in cotton growing in the more promising localities. For this purpose men will be needed in addition to those employed in the regular Agricultural Departments of colonies and Dependencies where cotton has become a recognised crop.

(17) *The supply of men.*—The evidence before us shows that it will not be easy to make rapid progress in engaging the staffs necessary for the adequate promotion of cotton growing. There are at least three classes of men required. There are the highly-trained men of outstanding ability needed for pure research into principles. There are men with good scientific qualifications required for the direct investigations, which must be done in each locality. Thirdly, there are the practical men without whom it will be impossible to do effective pioneer work or to bring influence to bear on ordinary agriculturists. Apart from these classes there will also be required, either by the Agricultural Departments or by some other Department of Government, administrative and executive officers on whom will depend the enforcing of regulations necessary for the proper control of the growers. This will be dealt with later as part of our second Question. With regard to the provision of scientific men, we are most strongly advised by the highly-qualified witnesses whom we have consulted, that there is a preliminary need which must be supplied, and without which the provision of a scientific staff will never be possible. We are told that it is necessary that there should be more pure research done at British Universities and other places in such subjects as Plant Physiology, Plant Genetics, Mycology, and Entomology. At least one Professorship or Readership in each of these sciences should be provided. In addition, provision ought to be made for a number of post-graduate studentships attached to these and other chairs, by means of which promising men can be trained in methods of Research before being drafted to the Central Institute for Research or to the scientific posts in the different local Departments of Agriculture. We are glad to have made a small beginning in this last-named direction by having arranged with the British Cotton Industry Research Association to co-operate with us in offering five such studentships to be held during the coming year. This is, however, obviously insufficient, and we recommend that this question of improved and enlarged arrangements for research and teaching in the Natural Sciences, upon which depend the future of all agricultural work and of the supply of raw material for many important industries, be taken into serious consideration by His Majesty's Government in consultation with the industries themselves. As will be found in our financial section, we recommend that contributions on a liberal scale for this purpose should be recognised as part of the expense of increasing the cotton supply.

¹ The Secretary of the State for the Colonies has now appointed this Committee, and at his invitation we have nominated our Chairman, Sir Henry Birchenough, K. C. M. G., as one of its members.

² See Appendix III.

(18) *Bureau of Information.*—There is one subordinate but yet very important matter that should be referred to here. We find that there is need for what may be called a Central Bureau of Information to collect and disseminate the knowledge of all matters of interest to scientific and other cotton growers. We hope before long to be able to make arrangements to publish a quarterly Review of Cotton Growing. We also find that there is and will be an urgent need for the appointment of a committee qualified, in consultation with spinners, to advise on the kinds and types of cotton to which it is desirable that investigators into cotton should give their attention. For many years the Imperial Institute has been ready at all times to give assistance to Governments and to individuals desirous of promoting the growing of cotton. The Institute has, however, had many difficulties in its way. By its constitution its purview covers an immense variety of products and it has neither the resources nor the staff to enable it to deal with all branches of cotton investigation on a scale which we consider now to be desirable. We have had before us a valuable memorandum (see Appendix V) from Prof. Wyndham Dunstan, C. M. G., F. R. S., containing full information with regard to the Imperial Institute, and we have every reason to hope that the Empire Cotton Growing Committee will be able to work in harmonious and fruitful co-operation with the Institute. The detailed arrangements for such co-operation have still to be considered.

Question II.—Efficient arrangements for (a) the control of cotton growing and (b) the marketing of cotton crops

A. THE CONTROL OF COTTON GROWING

(19) *Control of seed.*—The salient feature of modern progress in cotton growing is the maintenance of pure strains. There may perhaps be still differences of opinion as to the best methods for securing purity of strain and the degree to which it should be attempted under given local conditions. Improvement by elimination of "rogue" plants, by general selection of field types, by special selection of plants and consequent purification of strains, or by intentional hybridisation and subsequent purification, may, perhaps, all have their spheres of usefulness, and it would, at any rate, be premature if we were to express any opinion, as a Committee, on points of this kind. But it is, we believe, now a matter beyond the region of controversy that if cotton is to be grown anywhere successfully and profitably, all possible steps must be taken to prevent the mixing of different kinds (until the cotton undergoes the controlled blending which usually takes place in the cotton-spinning mill), and that the distribution of seed for sowing should be under strict Government control. It appears that this mixing can be brought about in several ways. First, there can be mixing, whether by fraudulent intention or by carelessness, of two or more different kinds of cotton in ginning or baling. Again, cotton may become mixed through the fraudulent or careless mixing at the ginnery or afterwards of seeds to be subsequently used for planting. Or, again, there is the natural danger of mixing resulting from hybridisation by insects of one kind of cotton with the pollen from another. Each of these causes of evil has its appropriate remedy, but in each case, Government control in some form is absolutely essential.

(20) *Compulsory measures against cotton pests.*—There are other directions in which control is necessary. By far the greater area in the British Empire in which cotton growing is contemplated is in the tropical zone. Hitherto, however, the greatest development of cotton has been in sub-tropical regions and the principal studies of its needs and difficulties have been carried out under sub-tropical conditions. The cotton-growing districts of the United States are entirely sub-tropical. The cotton plant there is an annual which is killed by the frosts of winter. The death of the cotton plant destroys insect and fungoid pests, or at least limits their survival. In the tropics, however, where there are practically no frosts, it is essential, according to our present knowledge, to fix arbitrarily a period during which the cotton plant shall not be in existence; in other words, it is necessary to secure the destruction of the old plants. This, of course, can only be done by regulations made and enforced under Government authority.

(21) *Methods of control must be adapted to local conditions.*—It may be remarked here that in the greater part of the areas most immediately available for cotton in the Empire the industry will probably depend on native growers. Naturally in each country the Government will decide on the most suitable objects and methods of control. It may be purely autocratic, or it may be exercised through native chiefs, or it may be administered by community systems. Where again plantations owned or directed by white men are possible,

it seems to us that it will be eminently desirable to establish as soon as possible a local Association of cotton growers with whom the Government can consult in all matters affecting the industry.

B. THE MARKETING OF COTTON CROPS SO AS TO SECURE THE BEST POSSIBLE RESULTS FOR THE GROWERS

(22) *Complexity of cotton values.*—It has to be recognised in connection with marketing that cotton is not an article having only one value at any particular time. It is not even an article the value of which depends only on its degree of ripeness or soundness or perfection of any kind. The fact is that there are many kinds of cotton, differing in many ways such as in fineness, length, strength, colour, &c. Each kind has its own eventual use, and to some extent spinning machinery specially adapted for one kind of cotton can not deal satisfactorily with other kinds. It is necessary to point out here that while the distinctions of quality referred to are of very great importance, yet they are so minute as not to be readily discernable by the ordinary uninstructed grower. The relative value of the different kinds of cotton is always a somewhat complex matter, simple in that it depends upon the laws of supply and demand, but complex in that for each kind of cotton the supply and demand may vary separately and may affect in varying degrees the supply and demand for some other kind. At the same time the supply and demand for the whole world's cotton crops has always an over-riding influence on price.

(23) *Necessity for good marketing.*—It follows from this that, within the limits of quality, which climate and other conditions make possible to any country, there is always some kind of cotton which pays better to grow than any other. The first condition is, of course, productivity. The cotton that gives the largest out-turn of lint per acre or per man is the best to grow, if other things are equal. But other things may be far from equal. 100 lbs. per acre at 9d. per lb. are better for the grower than 120 lbs. at 6d., though it must not be forgotten that it costs more to grow and pick clean cotton than to deliver dirty cotton. Everything depends on whether the arrangements for marketing are such as to secure that the grower does really get the better price for the more valuable cotton. It follows, therefore, that special arrangements should be made in the interests of the grower to secure good marketing. Since then, good marketing is a necessary condition of successful cotton growing, it seems to us to be a matter of great importance where cotton is a comparatively new product, that there should be some disinterested buying agency available to nurse the infant industry in matters of commerce.

(24) *Fixed prices.*—Again, there are other possibilities to be faced. We are satisfied that it will be necessary in many districts to fix somewhat in advance the prices to be paid for the cotton grown. A fixed price or a minimum price for a term of years has been recommended by one witness of great eminence. While we doubt if this is necessary or indeed financially possible, we feel sure that it will often be desirable to fix a price at the time of sowing or even before, and this obviously must involve taking the considerable risk of what the market conditions will be, nine or twelve months later, when the cotton reaches the mills. Similarly there are times when it may be advisable to make advances against growing crops to European planters who are experimenting with cotton.

(25) *Marketing agency.*—For all such purposes as these it seems necessary that there should be available an agency independent of the Government, whether local or imperial, which will be willing to conduct this kind of business and able to do so efficiently. It may be that so long as cotton is merely an experiment made on a Government farm, the Government will prefer to deal direct with the consumer. Eventually, if cotton growing becomes firmly established in any district, the marketing must undoubtedly fall into ordinary commercial channels. But in the midway period when the production is too large for the Government officer in charge to handle, and before the necessary commercial machinery is available, we are convinced that an independent agency is required. In view of the evidence placed before us we consider it a necessary condition to be attached to such an agency that it shall forego commercial profits for itself. A large capital, however, must be available in some form. The marketing of even the comparatively small quantity of 100,000 bales would at present prices require at least £3,500,000, and interest at market rates must necessarily be paid to the Banks and other agencies which find the money. Moreover some of the responsibilities, which it is suggested should devolve on this agency, will inevitably result in losses, which may be relatively large at times. The consideration of how these

are to be met will be resumed in our third QUESTION, under the heading of Finance.

(26) *British Cotton Growing Association.*—We have on our Committee two members directly representing the British Cotton Growing Association. Several other members nominated by other bodies have also been associated for many years with the Cotton Growing Association. We have also had the advantage of receiving very full information direct from the Association, and we have had evidence about their work from various parts of the Empire. It would be presumptuous on our part to criticise or adjudicate on the work done in the past by the British Cotton Growing Association. We wish, however, to make the definite recommendation that terms should be negotiated between ourselves and the Association, subject to the Association agreeing to the condition of foregoing commercial profits, whereby the latter would be generally employed as the agents of the Committee and perform duties of the kind which are indicated in § 25. Friendly discussions have already taken place on the subject.

Question III.—The provision of the necessary funds

(27) *Large capital expenditure.*—It will, we think, be obvious from what has so far been written, that the promotion of cotton growing will involve the expenditure of a good deal of money, apart from the large sums which will be required every year to finance and market the crop. It is, however, necessary to point out that there are many other matters, often of the most pressing importance, beyond those already mentioned for which money, and indeed a very large amount of money, will eventually be required. The great need in almost every Colony or Protectorate which has come under our notice is for better facilities for transport. Roads, railways, water communications, and harbour works are almost everywhere urgently demanded. There are also, in many cases, present or prospective needs for schemes for irrigation and drainage. With regard to matters of this kind we desire to make a few observations.

(28) *Allocation of financial responsibility between Government and the cotton industry.*—In the first place we wish to record our opinion that expenditure on general development of this character is and should be primarily the business of the local Government with or without the assistance of the Imperial Government. On the other hand we venture to suggest, as a guiding principle, that all expenditure incurred with the object of promoting the growing of cotton in particular, or still more the promotion of the growing of cotton instead of some other competitive crop, should be recognized as primarily a charge on the Cotton Industry. In saying this we do not ignore the claim which the Cotton Industry, as much as any other great industry, has to receive some degree of financial as well as moral support from the British Government. We welcome the readiness which has been shown by the Government in recent years to help those industries which are in need of assistance, and we feel that there will be no difficulty in presenting a strong case for support from the Treasury, to be given in some proportion to the efforts made by the Cotton Industry itself, to pay for the unremunerative work which will be necessary to secure the satisfactory supply of its raw material. This is a matter on which we feel that consultation and conference between the accredited representatives of the industry and the Treasury will be necessary. At present our object is to distinguish between the responsibilities for expenditure on the part of the cotton growing colonies, and the cotton using industries, and to establish the principle that *while expenditure which directly benefits the general interests of a colony should be borne by the colony itself, the cost of promoting the cultivation of cotton in preference to other crops should be recognised as a charge on the Cotton Industry.* We hope that this broad principle may find general acceptance in Lancashire and other cotton using districts. There will, of course, be many cases in which the exact application of a principle of this kind may be in doubt. In some countries, cotton is the most paying produce it is possible to grow; in others it is barely able to compete with other crops. Some colonies are better able to finance their own developments than others. In the poorer colonies, if cotton is to be developed at all, assistance must be given from the outside. Further, if the principle we have enunciated is accepted, we feel that it will be fair to urge that wherever the Cotton Industry is willing to make special efforts to promote cotton growing with the approval of this Committee, the local Government concerned should upon its side do all that it possibly can to provide sufficient means of transport and communication and other necessary adjuncts.

(29) *Financial requirements of the Empire Cotton Growing Committee.*—The amount of money which will be required annually for the promotion of cotton grow-

ing by this Committee can not as yet be estimated with any degree of accuracy. Apart from the modest annual sum asked for in our letter to your predecessor for establishment expenses and a small amount of preliminary work, money will be required in the near future for the various enterprises suggested in this Report. The circumstances of each Colony and Dependency will need to be examined separately, and it will only become possible to make particular estimates when we are put in control of such funds as will enable us to open definite negotiations. It is clear, however, that the following forms of enterprise will call for expenditure. They have been to some extent discussed in the earlier paragraphs of the Report.

(i) *Research work.*—The establishment of a Central Institute for Research into the general principles underlying the growth of cotton. The minimum staff suggested for this is four men of science, with the necessary European and native assistants, and in addition at least four younger men qualified for carrying on independent research under supervision. This is suggested only as the minimum staff necessary to begin with. It is to be expected that, before long, enlargement on a considerable scale would be called for. At any rate, it is certain that it would be desirable (as mentioned in § 12) to be able to arrange for subsidiary work to be done in other cotton-growing areas, in continuation and extension of the work of the Central Institute. In this connection reference has already been made (§ 13) to the British Cotton Industry Research Association. In regard to the financing of Research into cotton in growth, it does not matter whether the funds required are provided by the British Cotton Industry Research Association or are a charge upon the general fund, which we are asking to be provided for the promotion of cotton growing. The Research Association and this Committee are both in the early stages of their development, and we prefer to leave open for discussion the question as to which body should bear the responsibility of providing the funds necessary for Research into cotton in growth. It is sufficient for our present purpose to point out that very considerable expenditure is required, and that it will certainly bear fruit in largely increasing the wealth of the Empire.

(ii) *Readerships and studentships.*—There is also required, as mentioned in § 17, either by the aid of grants from this Committee or from other sources, the creation of several Readerships in Natural Science concerned with the living plant, and connected therewith the provision of several studentships in which men may be trained in methods of research. It is obvious that the provision of funds to secure this extension of Scientific study and teaching ought not to rest exclusively upon this committee nor upon the Cotton Industry alone. Most of the other textile trades are also concerned, as indeed are many other important industries, such as sugar, rubber, cocoa, &c, which depend on the living plant. At the same time it has been represented to us with great force that the future development of cotton growing absolutely depends on the provision of increased facilities for the study and teaching of Natural Science at British Universities and other places. In these circumstances we feel it is our duty to advise the Cotton Industry to include this form of expenditure in its provision of funds for cotton growing.

(iii) *Practical Agricultural Work.*—It is probable that in many of the Colonies and Dependencies, when the enlargement of their Agricultural Departments is taken in hand, it may be necessary for the Cotton Industry to finance wholly or in part the men who are employed in the special promotion of cotton growing. This will be particularly the case when it is thought advisable to employ men in the kinds of research or experimental work which ought to be done locally, but which do not appear to be immediately profitable to the local community.

(iv) *Pioneer Work.*—The need for the continuation of work of this kind has been explained in § 16. It seems to us clear that the cost of this ought to be a charge on the cotton industry rather than an obligation on any Colony or Dependency.

(v) *Commercial Handling.*—It will be evident, from what is said under Question II B above, that considerable sums may be wanted in this connection. The fixing in advance of a price to be paid for cotton must involve losses in some years. Advances to planters, however carefully watched, may sometimes be lost owing to crop failures. Propaganda work whether conducted by the local Government or by the commercial agency must cost money.

(vi) *Information.*—The Bureau of Information contemplated is not expected to be unduly expensive, and the suggested Review ought to have some earning power. Provision will, however, have to be made for covering all expenditure under this head.

(30) *Raising of required funds.*—A very important question in regard to Finance is how it is proposed to raise the money required. We are of opinion that it is impossible to raise it by appealing for gifts and voluntary subscriptions. It is equally impossible to raise money for the purposes named with the promise or expectation of ultimate profits. Profitable results are indeed to be expected, but they will accrue to the cotton growing and cotton using communities generally and not to individuals. It has already been remarked that, to a very large extent, cotton growing in the British Empire will be carried out by native growers working for themselves. It may well be that in some districts there will, in time to come, be opportunities for the investment of British capital subscribed by spinners and manufacturers on a profit-earning basis; but we are convinced for many reasons that such companies are neither practicable nor to be desired at the present stage.

(31) *Levy on the Cotton Industry suggested.*—There remains one other method of raising money, and that is the creation of a fund to be raised upon the basis of some kind of contribution or levy from The cotton Industry. The levy of so small a sum as 6d. per bale of 500 lbs. upon raw cotton imported into the United Kingdom would raise annually the sum of £100,000. Without committing ourselves at this stage to recommending that this particular method of raising funds should be adopted, we wish to point out that *prima facie* it presents certain advantages, such as simplicity, ease of collection and difficulty of evasion. It would certainly not in practice be noticed as a burden on the industry. Before, however, any definite plan of making a levy can be proposed it is necessary to lay the general principle before the public, in the hope and belief that when our Report has been studied it will meet with general acceptance.

(32) *Amount of funds needed and their control.*—Whatever method of raising the money is decided upon, two conditions are essential. In the first place, there must be elasticity in the arrangements, so that the amount raised may correspond with the expenditure which can from time to time be justified. In the second place, the granting of the money, so far as it comes from the industry, must be under the direct control of representatives of the bodies which agree to co-operate in providing the money. The amount of money required will be considerable, if efforts on an adequate scale are to be made to extend seriously the growth of cotton in the Empire, but whatever the amount proves to be, it will be trifling in comparison with the interests involved. Great Britain uses annually about 4,000,000 bales of cotton of an annual value at pre-war prices of £50,000,000, at present prices £150,000,000 or upwards.

(33) *Future prospects.*—In conclusion we desire to emphasize the opinions we have endeavoured to express in this Report. The problem of increasing the World's supply of cotton from the natural resources available in the British Empire is in no way insoluble. Good beginnings have already been made. Future developments may be confidently expected, if our proposals are found to be acceptable, and if adequate funds are provided by the Imperial Government, the Colonial Governments and the British Cotton Industry. Except in a few places, no phenomenal increase in the cotton supply can be looked for. Progress, though it may as a whole be great will be gradual, and will depend on patient and persevering work in every suitable locality. We recognise that, if our present recommendations and plans are approved, and if funds are provided as suggested, it will be our duty so to develop our own organisation and staff, as to make provision for carrying out in every detail the plans we have broadly sketched in this Report. Knowledge must be increased and men must be found to apply it. The preliminary survey of the Empire's resources presented in the second part of the Report must be followed by a permanent system of close and sympathetic intercourse with all who, whether in Government service or for their own private benefit, are engaged in developing or growing cotton throughout the Empire. It is no small task that is suggested, but we shall take it up with confidence that our efforts will meet with success.

APPENDIX III

**GENERAL CONCLUSIONS AND RECOMMENDATIONS OF THE
EMPIRE COTTON GROWING COMMITTEE; FROM ITS REPORT
TO THE BOARD OF TRADE, OCTOBER 22, 1919****GENERAL CONCLUSIONS AND RECOMMENDATIONS**

(34) In putting forward our conclusions and recommendations, we have to admit that they are to a large extent provisional in their character. We are convinced that it is possible for the British Empire to make good the world's shortage of cotton, but the one conclusion that stands out plainly and definitely, as the result of our work during the past two years, is that this achievement is beyond the powers of this or indeed of any Committee. It can only be accomplished by the united efforts of the Imperial Government and the Governments of the cotton-growing Dominions, Colonies, and Protectorates, supported by the active interest and cordial co-operation of all who are engaged in the Cotton Industry in this country.

Our general recommendations are as follows:—

(1) That the Empire Cotton Growing Committee be authorised to continue its work on the general lines of the present Report, and that a grant be made to it by the Treasury of a sum of not less than £10,000 per annum for five years to pay for its secretarial and other current expenses and for any outlay that proves to be necessary for initiatory work in directions connected with the objects of the Committee.

(2) That the immediate importance of greatly enlarging and strengthening the Agricultural Departments of British Colonies and Protectorates be recognised as a preliminary step essential to any rapid progress, and that the Colonial Office be respectfully recommended to appoint a committee to advise on the scale of numbers, salaries and general expenditure, which should be aimed at for adoption as and where circumstances permit.

(3) That, in order to supplement the present knowledge of scientific principles underlying cotton growing, a Central Research Institute be established as soon as possible for their investigation.

(4) That, in order to increase the supply and improve the training of scientific men, financial provision be made for at least four Readerships at British Universities in Plant Physiology, Plant Genetics, Mycology, and Entomology; that funds be provided for the awarding of Research Studentships to be held for one or for two years by graduates, who are selected for training in methods of research in these and other sciences concerned with the study of the living plant; the number of these to be five to begin with, but to be gradually and considerably increased before long.

(5) That we should establish a Bureau for the interchange of knowledge of cotton growing and should arrange for the publication of a Quarterly Review devoted to this subject.

(6) That the Governments of all cotton-growing areas in the Empire be advised to take full powers for exercising strict control over all essential matters connected with cotton-growing.

(7) That, where it is possible and seems desirable, such Governments be recommended to establish local Associations of cotton growers to advise their Government upon matters of general interest to the industry.

(8) That an agreement should be negotiated with the British Cotton Growing Association in accordance with which that body will act as agent for the Empire Cotton Growing Committee for marketing crops where this is desired by the local Government; that it should be a condition of this agreement that the British Cotton Growing Association shall forego the appropriation of any profits made in the business carried on under the agreement, provided that the Association is guaranteed against permanent loss arising therefrom.

(9) *Finance.*—That funds for the promotion of cotton growing in the Empire should be provided from the following sources:—

- (a) The British Treasury.
- (b) The local revenues of cotton-growing areas.
- (c) The Cotton Industry.

That the following general principles be accepted as a guide in discussion and in negotiations as to the allocation of financial responsibility to each of the above sources:

- (a) That the British Treasury may fairly be looked to:
- (1) To provide for the secretarial and establishment charges of the Empire Cotton Growing Committee and for outlay for initiatory work in directions connected with the objects of the Committee.
- (2) To contribute—in some proportion to be agreed—towards expenditure upon schemes approved by this Committee which have for their object the provision of the raw material upon which the great national industry of cotton manufacture depends.
- (3) To assist the Governments of Colonies and Protectorates—either by grants or more probably by guarantees—to provide funds for public works, such as railways, waterways, irrigation and harbour works, necessary for the development of their resources.
- (b) That where developments, although in their inception they may be connected with cotton growing, are calculated to extend the general prosperity of a Colony or Protectorate they should as a rule be financed by the Colonial or Protectorate Government.
- (c) That where the growing of cotton is promoted in preference to other profitable crops, and where pioneer work is undertaken in order to ascertain whether cotton can be grown profitably, the consequential expenditure should be at the charge of the Cotton Industry.
- (10) That the Committee be authorised to ascertain the opinion of the Cotton Trade of this country in regard to these recommendations, and in particular upon what lines effective co-operation in raising the necessary money may be expected from the organisations in which the trade is grouped.

NOTE.—Special Conclusions and Recommendations with regard to different parts of the Empire will be found at the end of Part II.

APPENDIX IV

OUTLINE OF EXECUTIVE ORGANIZATION SUGGESTED BY THE EMPIRE COTTON GROWING COMMITTEE AS NECESSARY TO CARRY OUT ITS RECOMMENDATIONS AND CONCLUSIONS

EMPIRE COTTON GROWING COMMITTEE

FUTURE ORGANISATION

The Empire Cotton Growing Committee is now in a position to outline the executive organisation it considers necessary to carry out the objects recommended in its main Report published in January, 1920 (Cd. 523). This organisation is subject to modification as experience and local conditions require. Most of the funds will be spent abroad in cotton growing countries; and the organisation proposed provides primarily for the employment of men abroad with a central office in London to co-ordinate work. As it has not been possible to consult local Overseas Administrations on the details of these proposals, a scheme has been prepared suited, in the first instance, to countries in which cotton growing has not as yet been very largely developed. Many features of the scheme will be of assistance to all the cotton-growing parts of the Empire, and, though it is probable that some of the more highly organised of these, such as the Dominions, India and Egypt, will prefer to finance their own arrangements in whole or part, the Committee will be glad to co-operate closely with such countries and, on their invitation, to extend to them any portion of the proposed organisation which may prove acceptable.

It will be seen that to carry out adequately the work which the Committee is convinced must be done in order to stimulate cotton cultivation an annual sum of £200,000 is needed.

FINANCE AND SUPERIOR ORGANISATION

It is proposed that the funds be provided jointly by trade interests and by the British Government. These funds will be vested in trustees as custodians under Royal Charter. There will be a general Administrative Council representative of trade interests, the Board of Trade, the Governments Overseas, and of the offices

of the British Government associated with those countries. The direct control will rest with an Executive Committee appointed from this main Council, whilst for particular aspects of the work, e. g., the different countries, research, information, etc., there will be sub-committees to which men of special qualifications and not on the Administrative Council will be co-opted.

EXECUTIVE WORK

The work which, according to the Report of January, 1920, must be done, if the production of cotton within the Empire is to be considerably increased, falls into three groups.

Group I, Mainly administrative in its character, requiring on the part of the staff general knowledge and organising ability, includes:—

- (1) Questions affecting general policy, finance and establishment.
- (2) Correspondence with, advice to, information from Government Departments, local Administrations, Agricultural Departments, and individual planters in cotton-growing areas, and the strengthening and supplementing of local staffs for work on cotton. This last will normally be done by finding men qualified to assist in developing cotton cultivation and by providing their salaries.
- (3) Forming and controlling an organisation for keeping in touch with local developments in all countries in the Empire actually growing cotton and in those suitable for cotton growing.
- (4) Organizing and carrying through pioneer work in suitable areas.
- (5) Bringing cotton growers and other workers on cotton growing together by the dissemination of information, and by providing them with facilities for keeping abreast with progress and development throughout the world.
- (6) Giving information, when available, to financial and commercial companies contemplating growing cotton; but on this point the Committee is of opinion that investors wishing to invest in cotton growing will be well advised to begin by making full enquiries for themselves.

Group II, Demanding scientific knowledge and training on the part of the staff—will include:—

- (1) Keeping abreast of, indexing, having available and disseminating judiciously information on all scientific and experimental work on cotton growing and re-acting on cotton growing.
- (2) Collecting full knowledge of the characteristics of all varieties of cotton.
- (3) Keeping in close touch with the British Cotton Industry Research Association.
- (4) Fostering actual research on cotton growing—
- (a) By the establishment of a special cotton research station or stations abroad.
- (b) By assisting in providing facilities for training men for the various agricultural services.
- (c) By assisting in selecting men for special work on cotton abroad.

Group III, Mainly of a commercial character—will include:—

- (1) Valuing cottons and keeping in touch with all markets.
- (2) Where advisable guaranteeing prices to growers.
- (3) Taking the necessary measures to secure to growers better prices for better cotton.
- (4) Where desired ginning and marketing cotton.
- (5) Spending money on the promotion of the growing of cotton as compared with other crops.

In each of these groups there is much which must be done abroad, but all will require to be co-ordinated, and the three branches must work together supplementing each other.

THE CENTRAL OFFICE

This will be located in Westminster. It will undertake the general direction and control. This and the work described in the three preceding groups which falls directly on the Central Office will entail:—

- (a) Association with the Government Departments and the Cotton Industry and organisations at home.
- (b) Acquiring and maintaining an intimate and detailed knowledge of the physical conditions and progress of cotton growing, the existence and development of competing crops, the facilities for transport, the labour supply, the conditions and terms on which land is obtainable, etc., in all the tropical portions of the Empire.

(c) Close liaison with the Overseas Governments and the Departments of the Home Government associated with them.

(d) The employment of selected men who by touring will keep in touch with local developments.

(e) The collection and dissemination of all scientific and experimental work done on or bearing on cotton, etc., and the work in Group II (1, 2 and 3).

(f) The general direction of the research institutes to be established abroad, and consultation with scientific men on special problems as required.

(g) Arranging for the efficient carrying out of the Commercial Work detailed in Group III.

(h) The establishment of a Journal, or co-operation with other bodies for this purpose.

(i) The engaging of men for strengthening and supplementing agricultural departments overseas.

(k) Aiding in providing facilities for training men for agricultural departments.

To discharge this work the following staff and organisation will be necessary:—
(1) A General Director who should be selected for his organising capacity and experience and general knowledge. It would be advantageous if he had experience of tropical administration and conditions and also of cotton.

(2) A General Secretary.

(3) Three sections are needed for the work in the Central Office under (b) and (c), viz., acquiring and maintaining detailed knowledge of the cotton growing countries in the Empire. These sections would deal respectively with

(i) Egypt, the Soudan, India and the East.

(ii) The Rest of Africa excluding the Union of South Africa.

(iii) The self-governing Dominions and the West Indies and other parts of the Empire.

Much of the work for the Journal could also probably be handled between these sections.

Each of these three sections will be in charge of an Assistant Secretary of the standing of the administrative staff in the Home Civil Service.

4. The Committee lay special stress on the work under (d)—the employment of selected men as Travelling Commissioners who will keep in touch with local development by systematic touring.

In the development of cotton cultivation, reliance can not be placed solely or even mainly on a Central Office in London. Any plans for supplementing the staffs of local agricultural departments and for useful expenditure to supplement their efforts, must be first discussed with the local administrations and local agricultural departments, to insure their cooperation and assistance. The various countries should also be visited periodically to promote the maintenance of a full understanding with local administrations. In cases in which exploratory work is organised directly by the Committee, or men happen to be employed abroad directly under the Committee, periodical inspection is necessary. The Central Offices thus need the services of Travelling Commissioners free to tour who should be able to spend sufficient time in the countries they visit to absorb local conditions. Four such men will suffice. At first they will probably be mostly engaged in bringing back suggestions as to how local efforts can be supplemented, whether capital is required for cotton growing in particular localities, and what further exploration is needed. Agricultural knowledge and administrative experience is desirable in these Travelling Commissioners.

5. For the work under (e) and (f) scientific knowledge is required on the staff. A man who had been engaged on scientific work in the tropics, preferably on cotton, and had recently returned to England on pension, should be well suited for much of the work of recording and disseminating information useful for men abroad at work on cotton. The actual Research work to be undertaken abroad will be controlled in each place by a responsible chief, but the financial control will be in the hands of the General Director. The study of special scientific problems will be submitted as required to the highest available authorities by the General Director.

6. It is expected that much of the commercial work under (g) will be done by the British Cotton Growing Association, with whom an agreement has been provisionally arranged, but it will be necessary to have a Commercial Secretary in the Central Office.

On this basis the general scale of salaries for the staff directly attached to the Central Office would be approximately as follows:

General Director £2,000 or upwards.

Traveling Commissioner . . . £1,200 to £1,800, plus expenses.

General Secretary . . . £750 to £1,000.
 Assistant Secretaries in charge of Territorial Sub-Sections . . . £400 to £800.
 Scientific Recorder . . . £500 to £750.
 Commercial Assistant . . . £750.

The cost of the Central Office including rent and minor expenses is estimated to amount to about £25,000 per annum.

THE STAFF ABROAD

Research Station or Stations abroad.—These will conduct the higher research regarding the cotton plant, as distinct from investigations designed to promote the interests of particular areas, and will be under the financial control of the General Director.

The exact plans are necessarily postponed until the Administrative Council comes into existence and the Director is appointed. It is, however, considered that a beginning could be made with £20,000 per annum to cover salaries and expenses including interest and amortization on the initial outlay of capital.

SUPPLEMENTING THE STAFFS OF AGRICULTURAL DEPARTMENTS OVERSEAS, AND PIONEERING

It is convenient to take these two classes of work together as they will only be undertaken after consultation with the Local Agricultural Departments and as the men, who will be engaged for such work, will possess qualifications similar to those required by agricultural departments abroad. The duty of providing an Agricultural Department falls primarily on the local government. Whilst the different Agricultural Departments have done much exceedingly valuable work on cotton, yet the care of all crops falls naturally within their duties. If exceptional attention be desired for cotton it is not unreasonable that the Committee should find and pay additional men required for that purpose. In working any such proposals the greatest stress is laid on the fullest co-operation with the Local Agricultural Departments. Help could, of course, be given to them by block grants, but it is believed that more rapid progress may be expected and greater efficiency attained if these additional men are found and paid for by the Empire Cotton Growing Committee. In putting forward this scheme there is no intention of creating an independent body inside a local department. The additional men will be posted to a department for a specified period, after full consultation with and on invitation by the local administration. They will be fully under the control of the local Director of Agriculture, subject to the same rules of discipline as the local officers of the department, and draw their salaries and allowances through the local treasuries, the Committee being responsible to the Local Government for providing the funds needed. As the work of these men will benefit the locality, it is hoped that the Local Governments will supply the subordinate staff necessary and also the local traveling expenses; though in the case of some of the less developed countries it is recognised that contributions may reasonably have to be made for this purpose.

This method is preferable to a system of lump grants to departments, because:—

(1) It creates a body of men who will have specialised in cotton, from which at times a Local Government may be very glad to draw.

(2) It is more flexible—local departments are necessarily organised according to the unit of administration, and transfers of men between different administrations are not always easy to obtain.

(3) It will provide men from which the Travelling Commissioners can later be drawn.

Their emoluments will conform to those paid by the Agricultural Departments of the locality, with proper provision for a system of gratuities based on length of service in lieu of pensions; therefore, in framing these estimates the scales of pay in force or proposed for many of the agricultural departments abroad have been examined. In calculating the numbers required, the countries which are in a comparatively early stage of development have chiefly been considered, though invitations to extend the same system to the countries more fully organised will be welcomed.

Calculating on this basis, it will be necessary to provide for a staff of 90 men (including scientific workers, and agricultural officers of different grades) as supplemental to local Agricultural Departments. This it is estimated will cost £88,000 per annum. Pioneering work, capital expenditure, and local expenses

in countries in which local administrations would require assistance will absorb another £15,000.

The provisions for gratuities on termination of service will require the formation of a sinking fund of £7,000 a year.

Travelling allowances for transfers, journeys home and outward—£5,000.

This section of work is, therefore, estimated to cost eventually £115,000 per annum.

EDUCATION

Other funds which will mainly, but not necessarily, be spent at home will be required for the work under Group II, (iv) b—i. e., assisting in providing facilities for training men for the various agricultural services abroad.

It is estimated that to meet the demand for scientists for work on tropical plants, University staffs in this country should be increased specially for this purpose by at least:—

4 Professorships.....	£5, 000
15 Lectureships in Science.....	12, 000
6 Administrative and Technical Lectureships.....	5, 000
20 Post Graduate Studentships.....	5, 000
	<hr/>
	27, 000
Less Contributions from other Industries (say).....	15, 000
	<hr/>
	12, 000

Such a staff will be of service to all industries using tropical vegetable products, and it is proposed to endeavour to co-ordinate these industries in a common effort for this purpose. It is suggested that the cotton industry will be doing its share if it finds £12,000 a year.

INFORMATION

The cost of supplying information and of the issue of a journal has been included in the estimate for the Central Office.

COMMERCIAL HANDLING

Under this head a great variety of expense is possible, and apart from the difficulty of estimating what money will be wanted, there is the further question as to the amount of assistance that may be expected from the British Cotton Growing Association. It is, of course, understood that in doing commercial work for the Empire Cotton Growing Committee the British Cotton Growing Association will neither make a profit nor incur losses to themselves, and, therefore, profit and loss will fall to the account of the Empire Cotton Growing Committee.

The kind of expenses which will be incurred include the following:—

- (i) Guaranteeing prices.
- (ii) Advances against growing crops.
- (iii) Ginning, baling and costs of bringing to market.
- (iv) Carrying the crop and merchandising.

The following points await further consideration:—

(a) The probable capital required (other than that which may be obtainable each season from the Banks) for financing every 100,000 bales up to, say, 500,000.

(b) The losses which must be expected if a liberal policy of forward buying is adopted, remembering the possibility of a fall in the price of cotton during the next few years.

There is another kind of expense not dealt with in the main report, viz., the setting up of experimental cotton growing enterprises on a semi-commercial scale. The work proposed to be undertaken by the British Cotton Growing Association in India might be mentioned as an instance. It is hoped that before long shape may be given to another organisation for growing cotton in suitable places on commercial lines. In the meantime it is considered wiser not to include work of this kind within the scope of this budget.

SUMMARY

The summary of the foregoing annual financial requirements is:—

Central Office and Journal.....	£25,000
Research Stations abroad.....	20,000
Supplementing staffs overseas and pioneering.....	115,000
Education.....	12,000
	<hr/>
	172,000

To this must be added the Commercial Handling for which no estimate has been framed, but which will require funds.

It is clear that the annual outlay under some of these heads will not at first be realised, but on the other hand, it will be necessary at the earliest stages to be very liberal under the head of Commercial Handling in places in which the growing of cotton is still in its infancy. Thus, in order to carry out the recommendations of the main report, an income of approximately £200,000 ought to be assured.

APPENDIX V

Revenue and expenditures account and balance sheet of the Empire Cotton Growing Corporation for the year ending March 31, 1924

LIABILITIES				£	s.	d.	£	s.	d.
Capital Grant from Imperial Government.....							978,715	0	0
Cotton levy									
Amount collected to Mar. 31, 1923.....				75,909	7	0			
Amount collected to July 17, 1923.....				12,223	2	6			
Interest on Investment and bank balance representing the Levy..				2,097	12	6			
				<hr/>					
				90,230	2	0			
Less return of amounts contracted up to July 17, 1923.....				62,775	0	7			
				<hr/>					
				27,455	1	5			
Amount transferred to Revenue and Expenditure account.....				27,455	1	5			
							2,072	15	6
Revenue and Expenditure Account									
Balance at Mar. 31, 1923.....				13,244	9	6			
Excess of Income over Expenditure, year to Mar. 31, 1924.....				55,274	0	6			
Amount transferred from cotton Levy account.....				27,455	1	5			
				<hr/>			95,973	11	5
							<hr/>		
							1,076,761	6	11
ASSETS				£	s.	d.	£	s.	d.
Furniture and Fittings at cost.....				666	11	0			
Less depreciation to Date.....				126	12	10			
				<hr/>			539	18	2
Investments at Cost									
Capital Grant.....				978,048	9	0			
Revenue and Expenditure account.....				65,910	6	5			
				<hr/>			1,043,958	15	5
Sundry debtors.....							1,253	15	0
Cash at bankers									
Williams Deacon's Bank, Manchester.....				6,769	16	5			
Williams Deacon's Bank, London.....				1,072	4	2			
British Overseas Bank.....				22,300	0	2			
				<hr/>			30,142	0	9
Cash in hand, London and abroad.....							866	17	7
							<hr/>		
							1,076,761	6	11
REVENUE AND EXPENDITURE ACCOUNT									
To expenditures abroad:							£	s.	d.
Tanganyika—									
Salaries and passages.....							2,479	11	11
Local Travelling, Labour and Material.....							932	6	0
Grant for Cotton Development.....							5,000	0	0
Nyassaland—									
Salaries and passages.....							2,569	18	8
Local Travelling, Labour and Material.....							474	12	3½
Cotton Experiment Station.....							968	18	11
Australia—Salaries and passages.....							2,101	0	9
South Africa—Salaries and passages.....							1,531	2	1
Sudan—Tour and Report of Sir John Russell and Doctor Leake, actual and estimated..							1,228	9	0
Indies—									
Salaries and cost of Experiment Station.....							759	12	6
Grant to Imperial College of Tropical Agriculture.....							500	0	0
Uganda—Flows presented to Uganda Government.....							486	10	3
							<hr/>		
							19,032	2	4½

	£	s.	d.
To Tour in America of Mr. H. C. Sampson.....	450	10	9
To Studentships, including Passages and Grants for Books and Apparatus.....	3,351	1	5
To British Empire Exhibition.....	706	13	10
To Grants for Research.....	2,500	0	0
To Spinning Tests, Purchase of East India Cottons.....	144	4	3
To Office Staff, Salaries.....	6,198	1	6
To Rent.....	700	0	0
To Gas, Electricity and Telephone.....	70	7	6
To Upkeep of offices.....	202	8	8
To Traveling Expenses, Members of Council, Committees and Staff.....	1,000	1	7
To Legal Expenses and Accounting Charges.....	126	15	7
To Printing and Stationery.....	620	6	6½
To Printing and Publishing The Empire Cotton Growing Review.....	253	1	5
To Sundry Expenses.....	248	17	9
To Depreciation of Furniture and Fittings.....	59	19	9
To Balance, being excess of Revenue over Expenditure for the year.....	55,274	0	6
	90,938	13	5
By Cotton Levy from July 18, 1923, to Mar. 31, 1924.....	34,521	1	4
	£	s.	d.
By Interest and Dividends from Investments Representing the Capital Grant.....	56,411	10	8
By Interest and Dividends from Investments Representing Surplus Income.....	717	0	5
	56,128	11	1
By Bank Interest.....	263	5	0
By Sale of Bonds.....	25	16	0
	90,938	13	5

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